Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

INDEX

TO THE

PHILOSOPHICAL TRANSACTIONS

FOR THE YEAR 1831.

A.

ABEL and JACOBI (MM.), their new methods of investigation of elliptic functions, 350.
Astronomy (*physical*), researches in, 15, 231, and 283.
Attraction (*local*), on the errors occasioned by it, in the courses of vessels, 215.
Aurora Borealis, on its influence on terrestrial magnetism, 199.

B.

BARLOW (PETER, Esq.). On the performance of fluid refracting telescopes, and on the applicability of this principle of construction to very large instruments, 9.
——————— On the probable electric origin of all the phenomena of terrestrial magnetism; with an illustrative experiment, 99.
——————— On the errors in the course of vessels, occasioned by local attraction; with some remarks on the recent loss of His Majesty's ship Thetis, 215.
BARRY (ALEXANDER, Esq.). On the chemical action of atmospheric electricity, 165.
BIOT, the earth considered as a magnet by, 99.
Blood (*circulation of*), sources and nature of the powers on which it depends, 489.

C.

Canals (*narrow*), supposed to traverse a mass of fluid in equilibrium, 116.
CHLADNI, his discovery of the forms assumed by sand, &c. on vibrating plates, alluded to, 299.
CLAIRAUT, his theory cannot lead to the exact determination of the equilibrium of fluids, 121.
——— inconvenience of his method of solving the lunar theory, 231.
Comet (*the second of* 1822), observations on, 1.
——————— first discovered by M. PONS, 2.
——————— Lieutenant HENDERSON's remarks on, 5.

D.

DANIELL (J. FREDERICK, Esq.). Further experiments with a new register-pyrometer for measuring the expansion of solids, 443.

DAVY (EDMUND, Esq.). On a simple electro-chemical method of ascertaining the presence of different metals; applied to detect minute quantities of metallic poisons, 147.

Dip observations, KRAFT'S formula for connecting with each other, 100.

E.

Earth (*the*), considered by BIOT as a magnet, 99.

Electricity (*atmospheric*), on the chemical action of, 165.

Elliptic transcendents, on the theory of, 349.

ENCKE, his comet seen at Rio de Janeiro, June 7th, 1822, 7.

Equinoxes, on the precession of the, 19.

———— (*on the precession of*), supposing the earth to revolve in a resisting medium, 279.

F.

FARADAY (M. Esq.). On a peculiar class of acoustical figures; and on certain forms assumed by groups of particles upon vibrating elastic surfaces, 299.

———————— appendix to his paper on acoustical figures, &c., 319.

Figures (*acoustical*), on a peculiar class of, &c., 299.

Fluid, the equilibrium of a homogeneous mass of, entirely at liberty, when the accelerating forces are known functions of the coordinates of their point of action,—problem to determine, 122.

——— the equilibrium of a homogeneous, entirely at liberty, the particles attracting one another with a force inversely proportional to the square of the distance, at the same time that they are urged by a centrifugal force, caused by a rotation about an axis, —problem to determine, 128.

Fluids, on the equilibrium of, 109.

——— equilibrium of, not exactly determinable by CLAIRAUT'S theory, 121.

——— theory of the equilibrium of, applied to the question of the figure of the planets, 121.

——— on the friction and resistance of, 423.

FOX (ROBERT WERE). On the variable intensity of terrestrial magnetism, and the influence of the aurora borealis upon it, 199.

G.

GILBERT (DAVIES, Esq.). On the nature of negative and imaginary quantities, 91.

———————— A table for facilitating the computations relative to suspension bridges, 341.

H.

HARRIS (WILLIAM SNOW, Esq.). On the transient magnetic state of which various substances are susceptible, 67.

———————— On the influence of screens in arresting the progress of magnetic action, 497.

———————— On the power of masses of iron to controul the attractive force of a magnet, 501.

HERSCHEL and BABBAGE, their explanation of certain magnetic phenomena, disputed by ARAGO, 86.

I.

Imperial Standard Yard for the Royal Society, construction and verification of, 345.

Iron (*masses of*), on their power to controul the attractive force of a magnet, 501.

IVORY (JAMES, Esq.). On the equilibrium of fluids, and the figure of a homogeneous planet in a fluid state, 109.

———————— On the theory of elliptic transcendents, 349.

J.

Jupiter, of what its great inequality consists, 289.

K.

KATER (Captain HENRY). An account of the construction and verification of a copy of the imperial standard yard made for the Royal Society, 345.

KRAFT, his formula for connecting dip observations with each other, 100.

L.

LLOYD (JOHN AUGUSTUS, Esq.). An account of operations carried on for ascertaining the difference of level between the river Thames at London Bridge and the sea, 167.

LUBBOCK (JOHN WILLIAM, Esq.). Researches in physical astronomy, 17, 231 and 283.

———————— On the meteorological observations made at the apartments of the Royal Society during the years 1827, 1828 and 1829, 223.

———————— On the tides in the port of London, 379.

M.

Magnetism, various substances susceptible of a transient state of, 67.

———————— (*terrestrial*), on the probable electric origin of all the phenomena of, 99.

———————— its laws inconsistent with those of a permanent magnetic body, but perfectly coincident with those of a body in a transient state of magnetic induction, 102.

Magnetism (*terrestrial*), on the variable intensity of, 199.

——————— influence of the aurora borealis on, 199.

Mars, on the extensive atmosphere of, 417.

Matter, every species of, more or less susceptible of transient magnetic energy, 86.

Moon, on the theory of the, 231.

N.

Needle (*magnetic*), deflected by a rectangle of bismuth only, 107.

O.

Observations (*meteorological*) *made at the apartments of the Royal Society in the years* 1827, 1828, 1829, *and* 1830, on the, 223.

P.

Palmer (Henry R. Civil Engineer). Description of a graphical registrer of tides and winds, 209.

Philip (A. P. W. M.D.). On the sources and nature of the powers on which the circulation of the blood depends, 489.

Pipes (*horizontal and bent*), general remarks on the expenditure of, 439.

Planet (*a homogeneous, in a fluid state*), on the figure of, 109.

Planets, on the theory of the motion of, continued from Phil. Trans., Part II. 1830, p. 357, 25.

Platinum, cause of the singular change which occurs in its texture, when heated in the black-lead registers, explained, 456.

Poisons (*metallic*), electro-chemical method to detect minute quantities of, 147.

Poncelet and Lesbros (MM.). Results of their experiments on the expenditure of water through large rectangular orifices, 441.

Q.

Quantities, negative and imaginary, on the nature of, 91.

R.

Register-pyrometer, further experiments with a new one for measuring the expansion of solids, 443.

Registrer (*graphical*) of tides and winds, 209.

Rennie (George, Esq.). On the friction and resistance of fluids, 423.

Robertson (Captain William, R.N.). Observations of the second comet of 1822, made at Rio de Janeiro, 1.

S.

SABINE (Captain EDWARD, R.A.). Experiments on the length of the seconds pendulum at the Royal Observatory at Greenwich, 459.

Screens, on their influence in arresting the progress of magnetic action, 497.

Seconds pendulum at the Royal Observatory at Greenwich, experiments on the length of, 459.

Sidereal objects, steadiness of one, remarkably contrasted with the unsteadiness of another seen under similar circumstances of atmosphere and altitude, 419.

SOUTH (Sir JAMES). On the extensive atmosphere of Mars, 417.

Suspension bridges, table for facilitating the computations relative to, 341.

T.

Telescopes (fluid refracting), on, 9.

——— advantages of sulphuret of carbon over glass, in the construction of, 12.

——— principal change proposed to be made in the construction of a very large one, 14.

Thames, difference of level of, between London Bridge and the sea, &c. 167.

Thetis (HIS MAJESTY'S *ship*), remarks on the loss of, 218.

Tide-gauge (LLOYD'S), description of, 174.

Tides and winds, graphical registrer of, 209.

Tides in the port of London, on the, 379.

V.

Vessels, errors in the course of, occasioned by local attraction, 215.

Vibrating surfaces, on the peculiar arrangement and motions of the heaps formed by particles lying on, 315.

——————— on the forms and states assumed by fluids in contact with, 319.

——————— crispated appearance of a stratum of water on, 319.

——————— similar appearances shown by other fluids, 322.

LONDON:
PRINTED BY RICHARD TAYLOR,
RED LION COURT, FLEET STREET.

A List of Public Institutions and Individuals, entitled to receive a copy of the Philosophical Transactions of each year, on making application for the same directly or through their respective agents, within five years of the date of publication.

In the British Dominions.

The King's Library.
The British Museum.
The Bodleian Library.
The Radcliffe Library.
The Cambridge University Library.
The Royal Observatory at Greenwich.
The Royal Institution of Great Britain.
The Royal College of Physicians.
The Society of Antiquaries of London.
The Society for the Encouragement of Arts.
The Astronomical Society of London.
The Cambridge University Philosophical Society.
The Royal Artillery Library at Woolwich.
The Geological Society of London.
The Horticultural Society of London.
The Linnean Society of London.
The University of Trinity College, Dublin.
The Library of King's Inn, Dublin.
The Royal Irish Academy.
The Observatory at Armagh.
The Royal Dublin Society.
The Edinburgh College Library.
The Royal Society of Edinburgh.
The University of St. Andrews.
The University of Aberdeen.
The University of Glasgow.
The Asiatic Society at Calcutta.
The Royal Asiatic Society.
The Observatory at Paramatta.
The Observatory at Madras.
The Medical and Chirurgical Society of London.
The London Institution.

Denmark.

The Royal Society of Sciences at Copenhagen.
The Royal Observatory at Altona.

France.

The Royal Academy of Sciences at Paris.
The Royal Academy of Sciences at Thoulouse.
The "Ecole des Mines" at Paris.
The Geographical Society at Paris.

Germany.

The University at Göttingen.
The Cæsarean Academy of Naturalists at Bonn.
The Observatory at Manheim.

Italy.

The Italian Society of Sciences at Modena.
The Royal Academy of Sciences at Túrin.

Belgium.

The Royal Academy of Sciences at Brussels.

Spain.

The Royal Observatory at Cadiz.

Portugal.

The Royal Academy of Sciences at Lisbon.

Prussia.

The Royal Academy of Sciences at Berlin.

Russia.

The Imperial Academy of Sciences at St. Petersburgh.

Sweden and Norway.

The Royal Academy of Sciences at Stockholm.
The Royal Society of Sciences at Drontheim.

United States.

The American Philosophical Society at Philadelphia.
The New York Philosophical Society.
The Boston Philosophical Society.
The Library of Harvard University.

The fifty Foreign Members of the Royal Society.

The President and Council of the Royal Society have directed that the disposable copies which remain of the volumes of the Philosophical Transactions, prior to 1816, should be sold at one third of the prices affixed at the time of publication. The undermentioned Parts may accordingly be obtained of the Society's bookseller at the annexed prices:—

		£	s.	d.
1801.	Part I.	0	5	8
	— II.	0	5	10
1802.	— I.	0	3	8
	— II.	0	5	10
1803.	— I.	0	4	2
	— II.	0	4	6
1804.	— I.	0	3	6
	— II.	0	4	2
1805.	— I.	0	3	4
	— II.	0	3	10
1806.	— I.	0	4	6
	— II.	0	5	10
1807.	— I.	0	3	4
1807.	Part II.	0	5	2
1809.	— II.	0	6	10
1810.	— I.	0	3	4
	— II.	0	4	0
1811.	— I.	0	5	0
	— II.	0	5	0
1812.	— I.	0	5	10
	— II.	0	5	10
1813.	— I.	0	4	8
	— II.	0	6	0
1815.	— I.	0	4	2
	— II.	0	7	4